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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sammy J. Graham

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EXAMINER

GARBOWSKI, LEIGH M

ART UNIT

PAPER NUMBER

2825

MAIL DATE

DELIVERY MODE

12/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/026,737

Applicant(s)

GRAHAM ET AL.

Examiner

Leigh Marie Garbowski

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2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-10, 12-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al. [U.S. Patent #6,438,435].

As per claim 1/10/21, a method of designing a routing element, wherein the routing element connects a plurality of components in a system, the method comprising: establishing a system design including the plurality of components [column 6, lines 1-20]; generating a diagram associated with the system, wherein the diagram indicates connections of the plurality of components in the system [column 6, lines 21-25]; establishing guidelines for designing the routing element based on physical constraints for the routing element, the guidelines including recommendations for designing the routing element [column 6, lines 1-20, 26-30]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [column 6, lines 31-38]. As per claim 3/12, further including: receiving one or more revised guidelines for designing the routing element; and determining a revised design for the routing element based on the diagram and the revised guidelines [column 6, lines 27-28]. As per claim 4/13, further including: providing a drawing/schematic illustrating the system and a design for the routing element [figure 4, 27]. As per claim 5/14, wherein establishing guidelines includes: accessing guidelines/standards associated with the system design [column 8, lines 26-31; column 13, lines 56-58]. As per claim 6/15, wherein establishing guidelines includes: accessing guidelines/standards associated with the plurality of components or the routing element [column 8, lines 26-31; column 13, lines 56-58]. As per claim 7/16, further including: automatically providing information about the system

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design [column 6, lines 42, 48-column 7, line 5]. As per claim 8/17, wherein automatically providing information includes: providing at least one of: a three-dimensional drawing of the system, a two-dimensional drawing of the system, a list of components, and a bill of materials associated with at least one of the system, the routing element and the components [column 6, lines 42, 48-column 7, line 5; figure 4, 27]. As per claim 9, wherein the routing element includes a harness [column 5, line 67-column 6, line 1]. As per claim 18, wherein the structure includes a harness and the elements include wires [column 5, line 67-column 6, line 1]. As per claim 23, wherein the routing element includes one or more connecting elements and wherein establishing guidelines for designing the element includes establishing recommendations for routing the connecting elements through the system [column 6, lines 1-20, 26-30]. As per claim 24, wherein establishing guidelines for designing the routing element includes establishing the guidelines by prompting a user to answer one or more questions [column 6, lines 54-58; column 8, line 31]. As per claim 25, wherein establishing guidelines for designing the routing element includes accessing the guidelines from a centralized location [column 13, lines 20-21]. As per claim 26, wherein the routing element includes one or more connecting elements and wherein the routing design module is configured to establish guidelines for designing the routing element that include recommendations for routing the connecting elements in the system based on information reflecting attributes of at least one of the system, the connecting elements, and the components [column 6, lines 1-31].

As per claim 19, a tool for designing a routing element, wherein the routing element connects a plurality of components in a system via connecting elements, the tool comprising: a processor; and a computer-readable memory [figure 2, 22], wherein the memory includes: a computer-aided design module that, when executed by the processor, establishes a system design and generates a diagram associated with the system design, wherein the diagram indicates connections of the plurality of components in the system [column 6, lines 1-20; column 6, lines 21-25]; and a design module that, when executed by the processor, designs a routing pattern for the routing element based on one or more guidelines, the guidelines being based on physical

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constraints of the routing element and including at least one recommendation for routing the connecting elements in the system, and automatically determines routing patterns in the system for the element based on the diagram and the guidelines [column 6, lines 1-20, 26-30; column 6, lines 31-38]. As per claim 20, wherein the design module is software designed to work with the computer-aided design module [column 6, line 64-column 7, line 7].

As per claim 22, a method of routing an element to connect among a plurality of components in a system, the method comprising: establishing the plurality of components to be connected [column 6, lines 1-20; column 6, lines 21-25]; establishing routing guidelines based on the physical constraints of the element and including at least one recommendation for routing the element in the system [column 6, lines 1-20, 26-30]; and automatically determining a routing pattern for the element to connect the plurality of components based on the routing guidelines [column 6, lines 31-38].

As per claim 27, a method for designing a routing element that connects a plurality of components in a system, the method comprising: establishing a list of components and connections among the components [column 6, lines 1-20; column 7, lines 18-22]; generating a diagram of the system based on the list, the diagram illustrating the components and the connections [column 6, lines 21-25; column 7, lines 29-34]; establishing guidelines for designing the routing element based on the physical constraints of the routing element, the guidelines including information reflecting a geometry of the system [column 6, lines 1-20, 26-30]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [column 6, lines 31-38].

Claims 1, 4-10, 13-23, 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishikawa et al. [U.S. Patent #6,547,165].

As per claim 1/10/21, a method of designing a routing element, wherein the routing element connects a plurality of components in a system, the method comprising: establishing a system design including the plurality of components [figure 8; figure 20]; generating a diagram associated with the system, wherein the diagram indicates connections of the plurality of components in the system [figure 8, S11, S13; figure 20];

establishing guidelines for designing the routing element based on physical constraints of the routing element, the guidelines including recommendations for designing the routing element [figure 8, S15-S31, figure 20]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [figure 8; figure 20]. As per claim 4/13, further including: providing a drawing/schematic illustrating the system and a design for the routing element [figure 1, element 17, 21]. As per claim 5/14, wherein establishing guidelines includes: accessing guidelines/standards associated with the system design [column 6, lines 28, 41, 59]. As per claim 6/15, wherein establishing guidelines includes: accessing guidelines/standards associated with the plurality of components or the routing element [column 6, lines 28, 41, 59]. As per claim 7/16, further including: automatically providing information about the system design [column 13, line 44]. As per claim 8/17, wherein automatically providing information includes: providing at least one of: a three-dimensional drawing of the system, a two-dimensional drawing of the system, a list of components, and a bill of materials associated with at least one of the system, the routing element and the components [column 6, line 23]. As per claim 9, wherein the routing element includes a harness [column 6, line 13]. As per claim 18, wherein the structure includes a harness and the elements include wires [column 6, lines 13]. As per claim 23, wherein the routing element includes one or more connecting elements and wherein establishing guidelines for designing the element includes establishing recommendations for routing the connecting elements through the system [figure 8, S15-S31, figure 20]. As per claim 26, wherein the routing element includes one or more connecting elements and wherein the routing design module is configured to establish guidelines for designing the routing element that include recommendations for routing the connecting elements in the system based on information reflecting attributes of at least one of the system, the connecting elements, and the components [figure 8, S15-S31, figure 20].

As per claim 19, a tool for designing a routing element, wherein the routing element connects a plurality of components in a system via connecting elements, the tool comprising: a processor; and a computer-readable memory [column 1, line 13; figure 1, element 15, 41] wherein the memory includes: a computer-aided design

module that, when executed by the processor, establishes a system design and generates a diagram associated with the system design, wherein the diagram indicates connections of the plurality of components in the system [figure 8, S11, S13; figure 20]; and a design module that, when executed by the processor, design a routing pattern for the routing element based on one or more guidelines, the guidelines being based on physical constraints of the routing element and including at least one recommendation for routing the connecting elements in the system, and automatically determines routing patterns in the system for the element based on the diagram and the guidelines [figure 8, S15-S31, figure 20]. As per claim 20, wherein the design module is software designed to work with the computer-aided design module [column 1, line 13].

As per claim 22, a method of routing an element among a plurality of components in a system, the method comprising: establishing the plurality of components to be connected [figure 8; figure 20]; establishing routing guidelines based on physical constraints of the element and including at least one recommendation for routing the element in the system [figure 8, S15-S31, figure 20]; and automatically determining a routing pattern for the element to connect the plurality of components based on the routing guidelines [figure 8; figure 20].

As per claim 27, a method for designing a routing element that connects a plurality of components in a system, the method comprising: establishing a list of components and connections among the components [figure 8; figure 20; column 6, line 28-column 6, line 12]; generating a diagram of the system based on the list, the diagram illustrating the components and the connections [figure 8, S11, S13; figure 20; column 7, lines 15-17]; establishing guidelines for designing the routing element based on physical constraints of the routing element, the guidelines including information reflecting a geometry of the system [figure 8, S15-S31, figure 20]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [figure 8; figure 20].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quintero et al. [U.S. Patent #5,293,479].

As per claim 1/10/21, a method of designing a routing element, wherein the routing element connects a plurality of components in a system, the method comprising: establishing a system design including the plurality of components [column 3, lines 4-20, 35]; generating a diagram associated with the system, wherein the diagram indicates connections of the plurality of components in the system [column 6, lines 13-22; column 9, lines 37-59]; establishing guidelines for designing the routing element based on physical constraints, the guidelines including recommendations for designing the routing element [column 7, line 16-column 8, line 57]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [column 10, line 63-column 11, lines 5, 35-64]. However, Quintero et al. is broadly described as designing a connected collection of components, albeit with the suggestion for the invention being useful for wire harness assemblies [column 1, lines 10-17]. Considering that Quintero et al. specifically suggests using the invention for wire harness assemblies, such claim language that is not even present in the claimed subject matter, a person of ordinary skill in the art at the time of the invention would have found it overwhelmingly obvious and motivating to use the Quintero et al. invention to obviate the claimed invention because the design of wire harness assemblies are well suited to the invention [column 3, lines 19-20, 35]. As per claim 2/11, wherein the routing element includes one or more connecting elements and wherein designing the routing element includes: determining one or more sets of one or more connecting elements that can be bundled; and determining a layout for each bundle within the routing element [column 5, line 59-column 6, line 36]. As per claim 3/12, further including: receiving one or more revised guidelines for designing the routing element; and determining a revised design for the routing element based on the diagram and the revised guidelines [column 6,

lines 51-56; column 9, lines 60-63]. As per claim 4/13, further including: providing a drawing/schematic illustrating the system and a design for the routing element [column 9, lines 37-56]. As per claim 5/14, wherein establishing guidelines includes: accessing guidelines/standards associated with the system design [column 8, lines 8-9]. As per claim 6/15, wherein establishing guidelines includes: accessing guidelines/standards associated with the plurality of components or the routing element [column 8, lines 8-9]. As per claim 7/16, further including: automatically providing information about the system design [column 9, line 66-column 10, line 14]. As per claim 8/17, wherein automatically providing information includes: providing at least one of: a three-dimensional drawing of the system, a two-dimensional drawing of the system, a list of components, and a bill of materials associated with at least one of the system, the routing element and the components [column 9, line 66-column 10, line 32]. As per claim 9, wherein the routing element includes a harness [column 3, lines 4-20, 35]. As per claim 18, wherein the structure includes a harness and the elements include wires [column 3, lines 4-20, 35]. As per claim 23, wherein the routing element includes one or more connecting elements and wherein establishing guidelines for designing the element includes establishing recommendations for routing the connecting elements through the system [column 7, line 16-column 8, line 57]. As per claim 24, wherein establishing guidelines for designing the routing element includes establishing the guidelines by prompting a user to answer one or more questions [column 8, lines 8-9]. As per claim 25, wherein establishing guidelines for designing the routing element includes accessing the guidelines from a centralized location [column 7, lines 42-43]. As per claim 26, wherein the routing element includes one or more connecting elements and wherein the routing design module is configured to establish guidelines for designing the routing element that include recommendations for routing the connecting elements in the system based on information reflecting attributes of at least one of the system, the connecting elements, and the components [column 6, lines 49-68].

As per claim 19, a tool for designing a routing element, wherein the routing element connects a plurality of components in a system via connecting elements, the tool comprising: a processor; and a computer-readable memory [column 10, lines 43-

57], wherein the memory includes: a computer-aided design module that, when executed by the processor, establishes a system design and generates a diagram associated with the system design, wherein the diagram indicates connections of the plurality of components in the system [column 3, lines 4-20, 35; column 6, lines 13-22; column 9, lines 37-59]; and a design module that, when executed by the processor, designs a routing pattern for the routing element based on one or more guidelines, the guidelines being based on physical constraints of the routing element and including at least one recommendation for routing the connecting elements in the system, and automatically determines routing patterns in the system for the element based on the diagram and the guidelines [column 7, line 16-column 8, line 57; column 10, line 63-column 11, lines 5, 35-64]. However, Quintero et al. is broadly described as designing a connected collection of components, albeit with the suggestion for the invention being useful for wire harness assemblies [column 1, lines 10-17]. Considering that Quintero et al. specifically suggests using the invention for wire harness assemblies, such claim language that is not even present in the claimed subject matter, a person of ordinary skill in the art at the time of the invention would have found it overwhelmingly obvious and motivating to use the Quintero et al. invention to obviate the claimed invention because the design of wire harness assemblies are well suited to the invention [column 3, lines 19-20, 35]. As per claim 20, wherein the design module is software designed to work with the computer-aided design module [column 10, lines 43-57].

As per claim 22, a method of routing an element to connect a plurality of components in a system, the method comprising: establishing the plurality of components to be connected [column 3, lines 4-20, 35]; establishing routing guidelines based on physical constraints of the element and including at least one recommendation for routing the element in the system [column 7, line 16-column 8, line 57]; and automatically determining a routing pattern of the element to connect the plurality of components based on the routing guidelines [column 10, line 63-column 11, lines 5, 35-64]. However, Quintero et al. is broadly described as designing a connected collection of components, albeit with the suggestion for the invention being useful for wire harness assemblies [column 1, lines 10-17]. Considering that Quintero et al.

specifically suggests using the invention for wire harness assemblies, such claim language that is not even present in the claimed subject matter, a person of ordinary skill in the art at the time of the invention would have found it overwhelmingly obvious and motivating to use the Quintero et al. invention to obviate the claimed invention because the design of wire harness assemblies are well suited to the invention [column 3, lines 19-20, 35].

As per claim 27, a method for designing a routing element that connects a plurality of components in a system, the method comprising: establishing a list of components and connections among the components [figure 2; column 8, lines 8-9; column 14, lines 3-8]; generating a diagram of the system based on the list, the diagram illustrating the components and the connections [column 6, lines 13-22; column 9, lines 37-59]; establishing guidelines for designing the routing element based on physical constraints of the routing element, the guidelines including information reflecting a geometry of the system [column 7, line 16-column 8, line 57]; and automatically designing a routing pattern for the routing element based on the diagram and the guidelines [column 10, line 63-column 11, lines 5, 35-64]. However, Quintero et al. is broadly described as designing a connected collection of components, albeit with the suggestion for the invention being useful for wire harness assemblies [column 1, lines 10-17]. Considering that Quintero et al. specifically suggests using the invention for wire harness assemblies, such claim language that is not even present in the claimed subject matter, a person of ordinary skill in the art at the time of the invention would have found it overwhelmingly obvious and motivating to use the Quintero et al. invention to obviate the claimed invention because the design of wire harness assemblies are well suited to the invention [column 3, lines 19-20, 35].

Response to Arguments


Applicant's arguments filed 10/30/2007 have been fully considered but again they are not persuasive. Given a broadest reasonable interpretation of the broadly claimed subject matter, including the current amendments, and the broad description in the specification, the examiner must maintain the above rejections, with the same reasoning given in the final rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Marie Garbowski whose telephone number is 571-272-1893. The examiner can normally be reached on days.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


LEIGH M. GARBOWSKI
PRIMARY EXAMINER